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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/764,846

01/26/2004

Yong Liu

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08/28/2006

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EXAMINER

LE, MIRANDA

ART UNIT

PAPER NUMBER

2167

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/764,846

Applicant(s)

LIU ET AL.

Examiner

Miranda Le

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/26/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. Applicants' Information Disclosure Statement, filed 01/26/04, has been received, entered into the record, and considered. See attached form PTO-1449.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless:

(e) the invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3, 4, 7, 10, 12, 14, 16, 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Grimsrud et al. (US Patent No. 6,742,080).

Grimsrud anticipated independent claims 1, 12 by the following:

As per claim 1, Grimsrud teaches method of accessing data on a storage medium of a data storage device comprising:

determining a file to be accessed based on a directory maintained by a host processor connected with the data storage device (*i.e. logical trace data, Fig. 4B*) (col. 5, line 41 to col. 6, line 17);

finding from a file system on the storage medium one or more locations on the storage medium for data in the file to be accessed (*i.e. read a logical file access record, Fig. 4C*) (col. 5, line 41 to col. 6, line 17);

compiling a file location linked list based on the one or more locations on the storage medium for data in the file to be accessed (*i.e. optimal disk block allocation, and the current cumulative access time, col. 6, lines 23-34*);

sending a download linked list command and the file location linked list from the host to the data storage device (*i.e. disk access, Fig. 3B; operating system provides I/O read/write services for accessing disk drives, col. 4, line 48 to col. 5, line 4*).

As per claim 12, Grimsrud teaches an apparatus comprising: a data storage device having a storage medium;

a host processor communicatively connected with the data storage device (*Figs. 3B; 15, col. 9, lines 22-48*); and

a memory coupled with and readable by the processor and having stored therein a series of instruction that, when executed by the processor, causes the processor to determine a file to be accessed based on a directory maintained by the host processor (*i.e. logical trace data, Fig. 4B*) (col. 5, line 41 to col. 6, line 17), find from a file system on the storage medium one or more locations on the storage medium for data in the file

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to be accessed (*i.e. read a logical file access record, Fig. 4C*) (col. 5, line 41 to col. 6, line 17), compile a file location linked list based on the one or more locations on the storage medium for data in the file to be accessed (*i.e. optimal disk block allocation, and the current cumulative access time, col. 6, lines 23-34*), and send a download linked list command and the file location linked list to the data storage device (*i.e. disk access, Fig. 3B; operating system provides I/O read/write services for accessing disk drives, col. 4, line 48 to col. 5, line 4; col. 9, lines 22-48*).

As per claim 3, Grimsrud teaches sending a file access command to the data storage device (col. 4, line 48 to col. 5, line 4).

As per claim 4, Grimsrud teaches the file access command is a read command (col. 4, line 48 to col. 5, line 4).

As per claim 7, Grimsrud teaches the file access command is a write command (col. 4, line 48 to col. 5, line 4).

As per claim 10, Grimsrud teaches the file access command is a seek offset command (col. 3, line 66 to col. 4, line 16).

As per claim 14, Grimsrud teaches the host processor further sends a read command to the data storage device (col. 4, line 48 to col. 5, line 4).

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As per claim 16, Grimsrud teaches the host processor further sends a write command to the data storage device (*col. 4, line 48 to col. 5, line 4*).

As per claim 18, Grimsrud teaches the host processor further sends a seek offset command to the data storage device (*col. 3, line 66 to col. 4, line 16*).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 2, 5, 6, 8, 9, 11, 13, 15, 17, 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grimsrud et al. (US Patent No. 6,742,080), in view of Boyle (US Patent No. 6,453,115).

As per claim 20, Grimsrud teaches a data storage device comprising:
a storage medium; a processor communicatively coupled with the storage medium and a host processor (*Fig. 3B*); and

a memory coupled with and readable by the processor and having stored therein a series of instruction that, when executed by the processor, cause the processor to receive a download linked list command and a file location linked list from the host processor (*i.e. disk access, Fig. 3B; operating system provides I/O read/write services for accessing disk drives, col. 4, line 48 to col. 5, line 4*).

Grimsrud does not teach the file location linked list indicating one or more Logical Block Addresses (LBAs) to be accessed and a sector count to be accessed at each LBA.

However, Boyle teaches the file location linked list indicating one or more Logical Block Addresses (LBAs) to be accessed and a sector count to be accessed at each LBA (*i.e. the extent 142 can either be the number of sectors that are occupied by the frame 103, 105, 107 data or the actual number of bytes the frame 103, 105, 107 data comprises. The extent field 142 can thus be expressed as the number of LBAs 130, the LBA 130 in which the frame 103, 105, 107 data ends, which will typically correspond to the next subsequent starting LBA 130, or the byte length of the frame 103, 105, 107, col. 11, lines 1-17*).

It would have been obvious to one of ordinary skill of the art having the teaching of Grimsrud and Boyle at the time the invention was made to modify the system of Grimsrud to include the file location linked list indicating one or more Logical Block Addresses (LBAs) to be accessed and a sector count to be accessed at each LBA as taught by Boyle.

One of ordinary skill in the art would be motivated to make this combination in order to provide the display controller to improve the efficiency with which the digital video storage and display system can access frames within the video stream data structure in view of Boyle, as doing so would give the added benefit of using this information to more efficiently decode and display the frames for implementations, as taught by Boyle (*col. 11, lines 18-27*).

As per claim 2, Grimsrud does not explicitly teach compiling the file location linked list comprises arranging entries in the file location linked list based on a Logical Block Address (LBA) for the one or more locations on the storage medium for data in the file to be accessed.

However, Boyle teaches compiling the file location linked list comprises arranging entries in the file location linked list based on a Logical Block Address (LBA) for the one or more locations on the storage medium for data in the file to be accessed (*i.e. the extent 142 can either be the number of sectors that are occupied by the frame 103, 105, 107 data or the actual number of bytes the frame 103, 105, 107 data comprises. The extent field 142 can thus be expressed as the number of LBAs 130, the LBA 130 in which the frame 103, 105, 107 data ends, which will typically correspond to the next subsequent starting LBA 130, or the byte length of the frame 103, 105, 107, col. 11, lines 1-17*).

It would have been obvious to one of ordinary skill of the art having the teaching of Grimsrud and Boyle at the time the invention was made to modify the system of

Grimsrud to include compiling the file location linked list comprises arranging entries in the file location linked list based on a Logical Block Address (LBA) for the one or more locations on the storage medium for data in the file to be accessed as taught by Boyle.

One of ordinary skill in the art would be motivated to make this combination in order to provide the display controller to improve the efficiency with which the digital video storage and display system can access frames within the video stream data structure in view of Boyle, as doing so would give the added benefit of using this information to more efficiently decode and display the frames for implementations, as taught by Boyle (*col. 11, lines 18-27*).

As per claim 5, Grimsrud teaches the data storage device accesses data on the storage medium by: receiving the download linked list command and the file location linked list from the host; receiving the read command (*col. 4, line 48 to col. 5, line 4; col. 5, line 41 to col. 6, line 17*).

Grimsrud does not specifically teach reading data from a number of sectors of the storage medium of the data storage device indicated in the file location linked list beginning at a Logical Block Address (LBA) indicated in the file location linked list; and updating a position counter based on a number of sectors read.

However, Boyle teaches reading data from a number of sectors of the storage medium of the data storage device indicated in the file location linked list beginning at a Logical Block Address (LBA) indicated in the file location linked list; and updating a position counter based on a number of sectors read (*i.e. the extent 142 can either be*

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the number of sectors that are occupied by the frame 103, 105, 107 data or the actual number of bytes the frame 103, 105, 107 data comprises. The extent field 142 can thus be expressed as the number of LBAs 130, the LBA 130 in which the frame 103, 105, 107 data ends, which will typically correspond to the next subsequent starting LBA 130, or the byte length of the frame 103, 105, 107, col. 11, lines 1-17; incrementing or decrementing a counter corresponding to the particular I-frame 103 that is to be retrieved from the video stream data structure 112 and decoded by the video stream decoder 116, col. 13, lines 20-49).

It would have been obvious to one of ordinary skill of the art having the teaching of Grimsrud and Boyle at the time the invention was made to modify the system of Grimsrud to include reading data from a number of sectors of the storage medium of the data storage device indicated in the file location linked list beginning at a Logical Block Address (LBA) indicated in the file location linked list; and updating a position counter based on a number of sectors read as taught by Boyle.

One of ordinary skill in the art would be motivated to make this combination in order to allow for fast forward, fast reverse and skipping to a particular start location in view of Boyle (*col. 13, lines 50-59*), as doing so would give the added benefit of allowing the display controller to implement more efficient flexible display of the stored video stream as taught by Boyle (*col. 13, line 59 to col. 14, line 5*).

As per claim 6, Boyle teaches requesting a new file location linked list if the

position counter exceeds a warning offset value in the file location linked list (*col. 12, col. 48 to col. 13, lines 49*).

As per claim 8, Grimsrud teaches the data storage device accesses data on the storage medium by: receiving the download linked list command and the compiled linked list from the host; receiving the write command from the host (*i.e. disk access, Fig. 3B; operating system provides I/O read/write services for accessing disk drives, col. 4, line 48 to col. 5, line 4; col. 9, lines 22-48*).

Grimsrud does not particularly teach writing a stream of data from the host to a number of sectors of the storage medium of the data storage device indicated in the file location linked list beginning at a Logical Block Address (LBA) indicated in the compiled linked list; and updating a position counter based on a number of sectors written.

However, Boyle teaches writing a stream of data from the host to a number of sectors of the storage medium of the data storage device indicated in the file location linked list beginning at a Logical Block Address (LBA) indicated in the compiled linked list; and updating a position counter based on a number of sectors written (*col. 6, line 22 to col. 7, line 21; col. 10, lines 27-67*).

It would have been obvious to one of ordinary skill of the art having the teaching of Grimsrud and Boyle at the time the invention was made to modify the system of Grimsrud to include writing a stream of data from the host to a number of sectors of the storage medium of the data storage device indicated in the file location linked list

beginning at a Logical Block Address (LBA) indicated in the compiled linked list; and updating a position counter based on a number of sectors written as taught by Boyle.

One of ordinary skill in the art would be motivated to make this combination in order to store the start locations of either only the I-frames or the start locations of all of the frames in view of Boyle, as doing so would give the added benefit of selecting frames can be accessed more readily for display purposes as taught by Boyle (*col. 10, lines 54-67*).

As per claim 9, Boyle teaches requesting a new file location linked list if the position counter exceeds a warning offset value in the file location linked list (*col. 12, col. 18 to col. 13, lines 49*).

As per claim 11, Grimsrud teaches the data storage device accesses data on the storage medium by: receiving the download linked list command and the compiled linked list from the host; receiving the seek offset command from the host (*col. 3, line 66 to col. 4, line 16; col. 4, line 48 to col. 5, line 4; col. 9, lines 22-48*).

Grimsrud does not particularly teach jumping a number of sectors of the storage medium of the data storage device indicated in the file location linked list from a current position; and updating a position counter based on the seek offset value.

However, Boyle teaches jumping a number of sectors of the storage medium of the data storage device indicated in the file location linked list from a current position; and updating a position counter based on the seek offset value (*col. 6, lines 38-49; col.*

12, lines 18-60; col. 13, line 20 to col. 14, line 5).

It would have been obvious to one of ordinary skill of the art having the teaching of Grimsrud and Boyle at the time the invention was made to modify the system of Grimsrud to include jumping a number of sectors of the storage medium of the data storage device indicated in the file location linked list from a current position; and updating a position counter based on the seek offset value as taught by Boyle.

One of ordinary skill in the art would be motivated to make this combination in order to allow for fast forward, fast reverse and skipping to a particular start location in view of Boyle (*col. 13, lines 50-59*), as doing so would give the added benefit of allowing the display controller to implement more efficient flexible display of the stored video stream as taught by Boyle (*col. 13, line 59 to col. 14, line 5*).

As per claim 13, Grimsrud does not explicitly teach compiling the file location linked list comprises arranging entries in the file location linked list based on a Logical Block Address (LBA) for the one or more locations on the storage medium for data in the file to be accessed.

However, Boyle teaches compiling the file location linked list comprises arranging entries in the file location linked list based on a Logical Block Address (LBA) for the one or more locations on the storage medium for data in the file to be accessed (*i.e. the extent 142 can either be the number of sectors that are occupied by the frame 103, 105, 107 data or the actual number of bytes the frame 103, 105, 107 data comprises. The extent field 142 can thus be expressed as the number of LBAs 130, the LBA 130 in*

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which the frame 103, 105, 107 data ends, which will typically correspond to the next subsequent starting LBA 130, or the byte length of the frame 103, 105, 107, col. 11, lines 1-17).

It would have been obvious to one of ordinary skill of the art having the teaching of Grimsrud and Boyle at the time the invention was made to modify the system of Grimsrud to include compiling the file location linked list comprises arranging entries in the file location linked list based on a Logical Block Address (LBA) for the one or more locations on the storage medium for data in the file to be accessed as taught by Boyle.

One of ordinary skill in the art would be motivated to make this combination in order to provide the display controller to improve the efficiency with which the digital video storage and display system can access frames within the video stream data structure in view of Boyle, as doing so would give the added benefit of using this information to more efficiently decode and display the frames for implementations as taught by Boyle (*col. 11, lines 18-27*).

As per claim 15, Grimsrud teaches the data storage device receives the download linked list command and the file location linked list from the host processor, receives the read command (*col. 4, line 48 to col. 5, line 4; col. 5, line 41 to col. 6, line 17*)

Boyle teaches the data storage reads data from a number of sectors of the storage medium of the data storage device indicated in the file location linked list beginning at a Logical Block Address (LBA) indicated in the file location linked list,

updates a position counter based on a number of sectors read, and requests a new file location linked list if the position counter exceeds a warning offset value in the file location linked list (*col. 12, col. 48 to col. 13, lines 49; col. 13, line 59 to col. 14, line 5*).

As per claim 17, Grimsrud teaches the data storage device receives the download linked list command and the compiled linked list from the host processor, receives the write command from the host processor (*col. 4, line 48 to col. 5, line 4; col. 5, line 41 to col. 6, line 17*).

Grimsrud does not specifically teach the data storage writes a stream of data from the host processor to a number of sectors of the storage medium of the data storage device indicated in the compiled linked list beginning at a Logical Block Address (LBA) indicated in the file location linked list, updates a position counter based on a number of sectors written, and requests a new file location linked list if the position counter exceeds a warning offset value in the file location linked list.

However, Boyle teaches the data storage writes a stream of data from the host processor to a number of sectors of the storage medium of the data storage device indicated in the compiled linked list beginning at a Logical Block Address (LBA) indicated in the file location linked list, updates a position counter based on a number of sectors written, and requests a new file location linked list if the position counter exceeds a warning offset value in the file location linked list (*col. 6, line 22 to col. 7, line 21; col. 10, lines 27-67; col. 12, lines 18-60; col. 13, line 20 to col. 14, line 5*).

It would have been obvious to one of ordinary skill of the art having the teaching of Grimsrud and Boyle at the time the invention was made to modify the system of Grimsrud to include the data storage writes a stream of data from the host processor to a number of sectors of the storage medium of the data storage device indicated in the compiled linked list beginning at a Logical Block Address (LBA) indicated in the file location linked list, updates a position counter based on a number of sectors written, and requests a new file location linked list if the position counter exceeds a warning offset value in the file location linked list as taught by Boyle.

One of ordinary skill in the art would be motivated to make this combination in order to allow for fast forward, fast reverse and skipping to a particular start location in view of Boyle (*col. 13, lines 50-59*), as doing so would give the added benefit of allowing the display controller to implement more efficient flexible display of the stored video stream as taught by Boyle (*col. 13, line 59 to col. 14, line 5*).

As per claim 19, Grimsrud teaches the data storage device receives the download linked list command and the compiled linked list from the host processor, receives the seek offset command from the host processor (*col. 3, line 66 to col. 4, line 16; col. 4, line 48 to col. 5, line 4; col. 9, lines 22-48*).

Grimsrud does not expressly teach the data storage device jumps a number of sectors of the storage medium of the data storage device indicated in the file location linked list from a current position, and updates a position counter based on the seek offset value.

However, Boyle teaches the data storage device jumps a number of sectors of the storage medium of the data storage device indicated in the file location linked list from a current position, and updates a position counter based on the seek offset value (*col. 6, lines 38-49; col. 12, lines 18-60; col. 13, line 20 to col. 14, line 5*).

It would have been obvious to one of ordinary skill of the art having the teaching of Grimsrud and Boyle at the time the invention was made to modify the system of Grimsrud to include the data storage device jumps a number of sectors of the storage medium of the data storage device indicated in the file location linked list from a current position, and updates a position counter based on the seek offset value as taught by Boyle.

One of ordinary skill in the art would be motivated to make this combination in order to allow for fast forward, fast reverse and skipping to a particular start location in view of Boyle (*col. 13, lines 50-59*), as doing so would give the added benefit of allowing the display controller to implement more efficient flexible display of the stored video stream as taught by Boyle (*col. 13, line 59 to col. 14, line 5*).

As per claim 21, Grimsrud teaches the processor, responsive to receiving a read command (*col. 4, line 48 to col. 5, line 4; col. 5, line 41 to col. 6, line 17*).

Boyle teaches the data storage device reads data from a number of sectors of the storage medium indicated in the file location linked list beginning at a Logical Block Address (LBA) indicated in the file location linked list, updating a position counter based on a number of sectors read, and requests a new file location linked list if the position

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counter exceeds a warning offset value in the file location linked list (*col. 12, col. 18 to col. 13, lines 49*).

As per claim 22, Grimsrud teaches the processor, responsive to receiving a write command (*col. 4, line 48 to col. 5, line 4; col. 5, line 41 to col. 6, line 17*).

Boyle teaches the data storage device writes a stream of data from the host to a number of sectors of the storage medium indicated in the file location linked list beginning at a Logical Block Address (LBA) indicated in the file location linked list, updates a position counter based on a number of sectors written, and requests a new file location linked list if the position counter exceeds a warning offset value in the file location linked list (*col. 12, col. 18 to col. 13, lines 49*).

As per claim 23, Grimsrud teaches the processor, responsive to receiving a seek offset command (*col. 4, line 48 to col. 5, line 4; col. 5, line 41 to col. 6, line 17*).

Boyle teaches the data storage device jumps a number of sectors of the storage medium indicated in the file location linked list from a current position, and updating a position counter based on the seek offset value (*col. 6, lines 38-49; col. 12, col. 18 to col. 13, lines 49*).

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Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham, can be reached on (571) 272-7079. The fax number to this Art Unit is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Miranda Le
August 21, 2006



JOHN COTTINGHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100